

## **ENGINEERING EXHIBIT**

### **Application for Modification of Construction Permit Digital Low Power Television Station**

prepared for

**Sainte Partners II, L.P.**  
KECA-LP Eureka, CA  
Facility ID 26852  
Ch. 29 (digital) 15 kW

*Sainte Partners II, L.P.* (“*Sainte*”) is the licensee of Low Power Television station KECA-LP, Facility ID 26852, Eureka, CA (BLTTL-20100311ABG). A Construction Permit (“CP” BDFCDTL-20100519ABR) authorizes the flashcut to digital operation and relocation of KECA-LP to another site located 11.2 km from the licensed site. *Sainte* proposes herein to modify the CP to specify use of a different transmitting antenna and antenna height above ground.

It is proposed that KECA-LP will operate on Channel 29 using a “stringent” out of channel emission mask as currently authorized. Figure 1 depicts the 51 dB $\mu$  coverage contour of the proposed facility with that of the current CP and the licensed analog facility. The service area overlap shown demonstrates compliance with §73.3572 for a minor change.

The proposed facility will employ a new antenna system to be side-mounted on an existing tower structure associated with Antenna Structure Registration (“ASR”) number 1224088. No change to the overall structure height is proposed.

Interference study per OET Bulletin 69<sup>1</sup> shows that the proposal complies with the Commission's interference protection requirements toward all digital television, television translator, LPTV, and Class A stations. The results, summarized in Table 1, show no interference is predicted to be caused to any facility and therefore the proposal complies with §74.793.

The nearest FCC monitoring station is 384 km distant at Livermore, CA. This exceeds the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with quiet zones specified in §73.1030(a) and (b). There are no authorized AM stations within 3.2 kilometers of the site. The site is not within a border area requiring international coordination.

### **Human Exposure to Radiofrequency Electromagnetic Field**

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10) and considering 15 percent antenna relative field in downward elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is  $1.8 \mu\text{W}/\text{cm}^2$  which is 0.5 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

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<sup>1</sup>FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. A cell size of 1 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

This exhibit is limited to the evaluation of exposure to RF electromagnetic field. The proposal involves installation of a side-mounted transmitting antenna on an existing antenna support structure. No change in structure height is proposed.

### **Certification**

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.



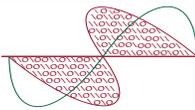
Joseph M. Davis, P.E.  
November 9, 2012

**Chesapeake RF Consultants, LLC**  
207 Old Dominion Road  
Yorktown, VA 23692  
703-650-9600

### List of Attachments

Figure 1	Coverage Contour Comparison
Table 1	Interference Analysis Results Summary
Form 346	Saved Version of Engineering Sections from FCC Form at Time of Upload

*This material was entered November 9, 2012 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's account number and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*



**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 1**  
**Coverage Contour Comparison**  
**KECA-LP Eureka, CA**  
**Facility ID 26852**  
**Ch. 29 (digital) 15 kW**

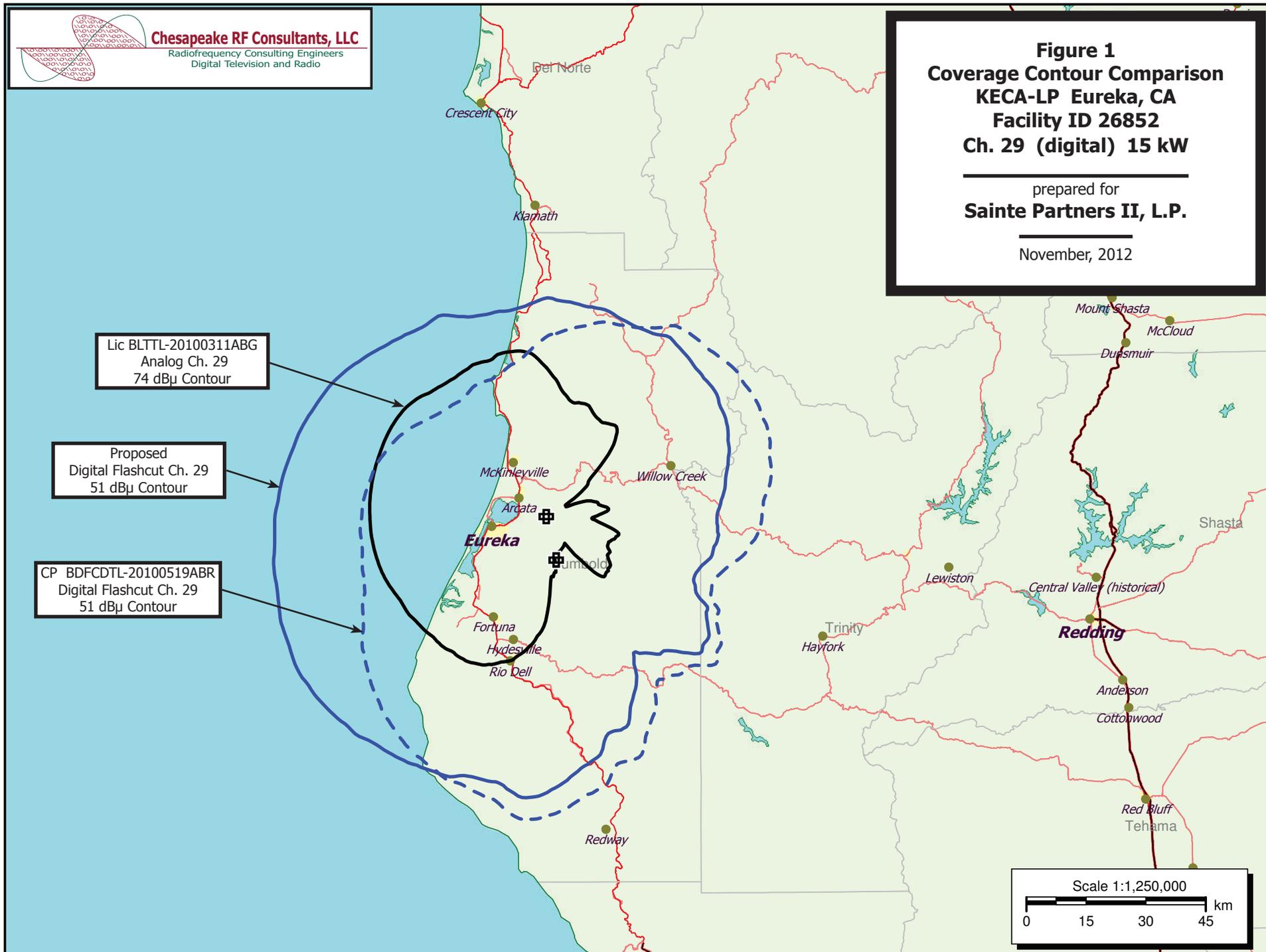
prepared for  
**Sainte Partners II, L.P.**

November, 2012

Lic BLTTL-20100311ABG  
Analog Ch. 29  
74 dB $\mu$  Contour

Proposed  
Digital Flashcut Ch. 29  
51 dB $\mu$  Contour

CP BDFCDTL-20100519ABR  
Digital Flashcut Ch. 29  
51 dB $\mu$  Contour



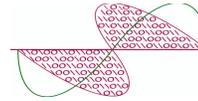
**Table 1**

**Interference Analysis Results Summary**

prepared for

**Sainte Partners II, L.P.**

KECA-LP Eureka, CA



**Chesapeake RF Consultants, LLC**  
 Radiofrequency Consulting Engineers  
 Digital Television and Radio

KECA-LP USERRECORD-01 EUREKA CA US  
 Channel 29 ERP 15. kW HAAT 499. m RCAMSL 00889 m STRINGENT MASK  
 Latitude 040-43-39 Longitude 0123-58-17  
 Dir Antenna Make usr Model ALP E Beam tilt N Ref Azimuth 290.

Ch.	Call	City/State	Dist (km)	Status	Application Ref. No.	---Population (2000 Census)---	
						Baseline	New Interference
14	K14MN	FORTUNA CA	35.7	LIC	BLTT-20051007ABW	---	none
25	K25CI	KLAMATH CA	88.7	LIC	BLTTL-19890623ID	---	none
26	KGEC-LP	REDDING CA	122.1	LIC	BLTTL-19971023JG	---	none
28	KBVU	EUREKA CA	0.0	LIC	BLCDT-20061215ACE	119,755	48 (0.04%)
28	K28CY-D	LEWISTON CA	96.1	LIC	BLDTT-20081007AFA	---	none
28	K28LC-D	REDDING CA	134.7	CP	BNPDTL-20090825ASN	---	none
28	K28LA-D	YREKA CA	153.3	CP	BNPDTL-20090825AQI	---	none
28	K28GG	MEDFORD OR	201.7	LIC	BLTTL-20041228ABG	---	none
28	K28GG	MEDFORD OR	202.0	CP	BDFCDTL-20090102ACK	---	none
29	K29JS-D	CHICO CA	209.5	CP	BNPDTL-20090916ACX	---	none
29	K29JD-D	REDDING CA	134.7	CP	BNPDTL-20090825AST	---	none
29	KPIX-TV	SAN FRANCISCO CA	355.3	LIC	BLCDT-20091112AIZ	---	none
29	DKREN-LP	SUSANVILLE CA	288.6	CP	BDFCDTL-20090609ABB	---	none
29	DKREN-LP	SUSANVILLE CA	288.6	LIC	BLTTL-20060420AAI	---	none
29	K29DF	UKIAH CA	194.0	LIC	BLTT-19960424IB	---	none
29	K29ES-D	CARSON CITY NV	395.4	LIC	BLDTT-20091105AAY	---	none
29	K29KR-D	CAMAS VALLEY OR	253.3	CP	BDCCDTT-20120521ABD	---	none
29	KEPB-TV	EUGENE OR	370.7	LIC	BLEDT-20050127AHY	---	none
29	K29JN-D	GOLD BEACH OR	193.9	LIC	BLDTT-20110513AAO	---	none
29	KDKF	KLAMATH FALLS OR	247.3	LIC	BLCDT-20080215APO	---	none
29	DK29GX-D	MERLIN OR	230.2	LIC	BLDTL-20110418AET	---	none
30	K52JT	REDDING CA	122.5	CP	BDISDTL-20110721ABF	---	none
30	K30JS-D	YREKA CA	149.4	CP	BPDTT-20120411ABT	---	none
30	K30JS-D	YREKA CA	149.4	LIC	BLDTT-20091118ABZ	---	none
30	KBLN	GRANTS PASS OR	192.8	LIC	BLCDT-20090224AAX	---	none
31	KEUV-LP	EUREKA CA	0.3	LIC	BLTTL-20050729AMX	---	none
33	KEMY-LP	EUREKA CA	0.3	LIC	BLTTL-20050729AMZ	---	none
33	K33HH	REDDING CA	122.6	LIC	BLTTL-20030507AAC	---	none
36	K36BT	BLUE LAKE CA	18.1	LIC	BLTTL-19940223IE	---	none

<b>Section III - Engineering (Digital)</b>												
<b>TECHNICAL SPECIFICATIONS</b>												
Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.												
<b>TECH BOX</b>												
1.	Channel: 29											
2.	Translator Input Channel No. :											
3.	Primary station proposed to be rebroadcast:											
	Facility Identifier	Call Sign	City	State	Channel							
4.	Antenna Location Coordinates: (NAD 27)											
	Latitude:											
	Degrees 40 Minutes 43 Seconds 39 <input checked="" type="radio"/> North <input type="radio"/> South											
	Longitude:											
	Degrees 123 Minutes 58 Seconds 17 <input checked="" type="radio"/> West <input type="radio"/> East											
5.	Antenna Structure Registration Number: 1224088											
	<input type="checkbox"/> Not Applicable [Exhibit 11] <input type="checkbox"/> Notification filed with FAA											
6.	Antenna Location Site Elevation Above Mean Sea Level: 808 meters											
7.	Overall Tower Height Above Ground Level: 134 meters											
8.	Height of Radiation Center Above Ground Level: 81 meters											
9.	Maximum Effective Radiated Power (ERP): 15 kW											
10.	Transmitter Output Power: 1.38 kW											
11.	a. Transmitting Antenna:											
	Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under <a href="http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm">CDBS Public Access</a> (http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm). Make sure that the Standard Pattern is marked Yes and that the relative field values shown match your values. Enter the Manufacturer (Make) and Model exactly as displayed in the Antenna Search.											
	<input type="radio"/> Nondirectional <input type="radio"/> Directional Off-the Shelf <input checked="" type="radio"/> Directional composite											
	Manufacturer ERI Model AL8E-29											
	b. Electrical Beam Tilt: 1.75 degrees <input type="checkbox"/> Not Applicable											
	c. Mechanical Beam Tilt: degrees toward azimuth degrees True <input type="checkbox"/> Not Applicable											
	d. Directional Antenna Relative Field Values: <input type="checkbox"/> N/A (Nondirectional or Off-the-Shelf)											
	Rotation (Degrees): <input checked="" type="checkbox"/> No Rotation											
	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
	0	0.89	10	0.826	20	0.758	30	0.687	40	0.597	50	0.476
	60	0.34	70	0.229	80	0.188	90	0.222	100	0.287	110	0.322
	120	0.287	130	0.222	140	0.188	150	0.229	160	0.34	170	0.476
	180	0.597	190	0.687	200	0.758	210	0.826	220	0.89	230	0.944
	240	0.979	250	0.996	260	0.999	270	0.999	280	0.999	290	1
	300	0.999	310	0.999	320	0.999	330	0.996	340	0.979	350	0.944
	Additional Azimuths											
	e. Does the proposed antenna propose elevation radiation patterns that vary with azimuth for <input type="radio"/> Yes <input checked="" type="radio"/> No											

reasons other than the use of mechanical beam tilt?	[Exhibit 12]
If Yes, attach an Exhibit (see instructions for details).	

[Relative Field Polar Plot](#)

**NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.**

12.	<b>Out-of-channel Emission Mask:</b> <input type="radio"/> Simple <input checked="" type="radio"/> Stringent <input type="radio"/> Full Service
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**CERTIFICATION**

13.	<b>Interference :</b> The proposed facility complies with all of the following applicable rule sections. 47.C.F.R Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030.	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 13]
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14.	<b>Environmental Protection Act.</b> The proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance, an <b>Exhibit is required.</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No  See Explanation in [Exhibit 14]
By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.		

15.	<b>Channels 52-59.</b> If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable:
<input type="checkbox"/> The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.	
<input type="checkbox"/> Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licenses of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.	

16.	<b>Channels 60-69.</b> If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:
<input type="checkbox"/> Pursuant to Section 74.786(e), the applicant has notified, within 30 days of filing this application , all commercial wireless licenses of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.	
<input type="checkbox"/> Pursuant to Section 74.786(e), the applicant proposing operation on channel 63, 64, 68 and 69 ("public safety channels") has secured a coordinated spectrum use agreements(s) with 700 MHz public safety regional planning committee(s) and state administrator(s) of the region(s) and state(s) within which the antenna site of the digital LPTV or TV translator station is proposed to locate, and those adjoining regions and states with boundaries within 75 miles of the proposed station location.	
<input type="checkbox"/> Pursuant to Section 74.786(e), the applicant for a channel adjacent to channel 63, 64, 68 or 69 has notified, within 30 days of filing this application, the 700 MHz public safety regional planning committee(s) and state administrator(s) of the region and state containing the proposed digital LPTV or TV translator antenna site and regions and states whose geographic boundaries lie within 50 miles of the proposed LPTV or TV translator antenna site.	

**PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.**

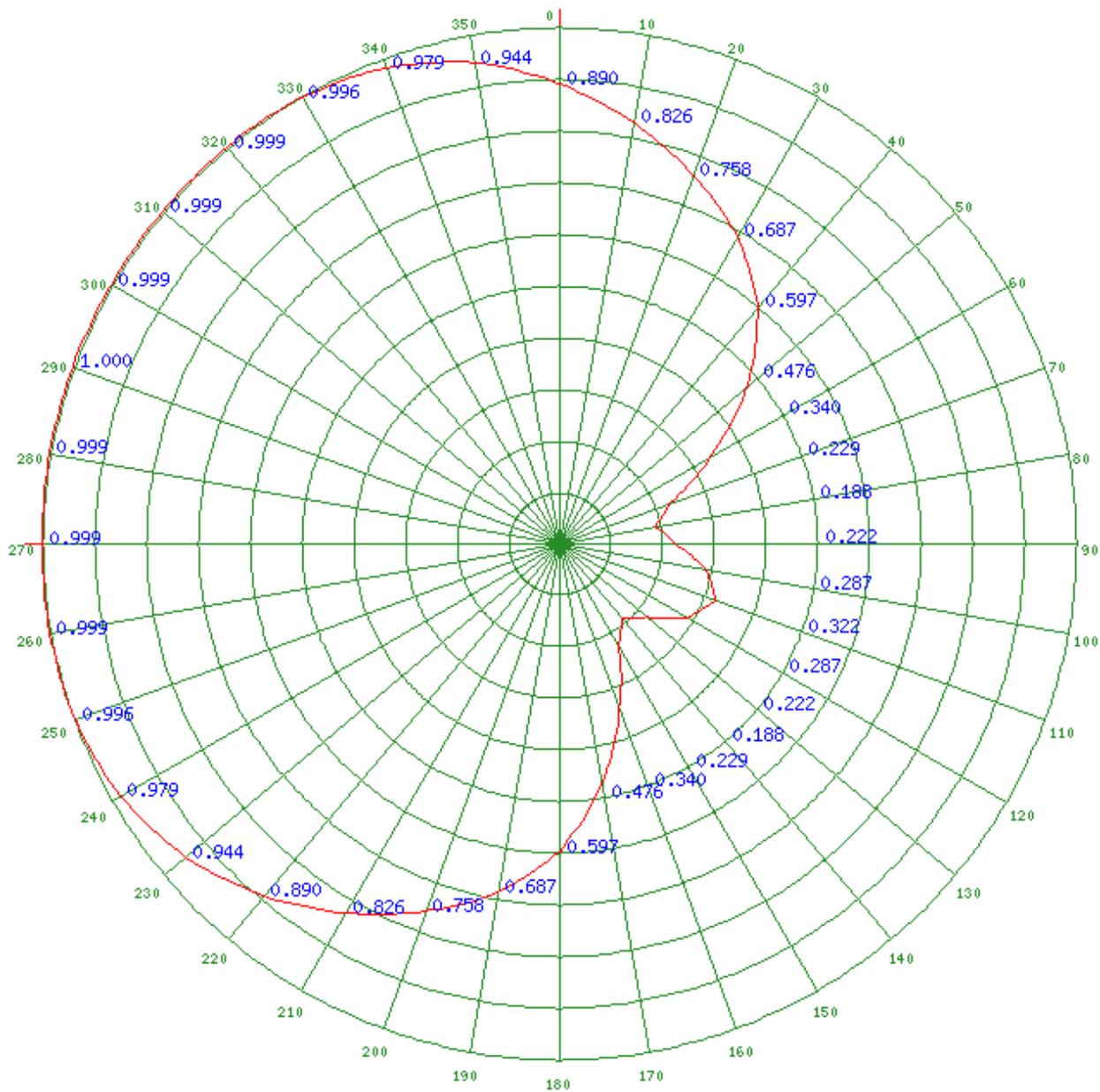
### SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.		Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature		Date 11/09/2012	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 207 OLD DOMINION ROAD			
City YORKTOWN	State or Country (if foreign address) VA	Zip Code 23692 -	
Telephone Number (include area code) 7036509600	E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM		

Any specified rotation has already been applied to the plotted pattern.  
 Field strength values shown on a rotated pattern may differ from the listed values because intermediate azimuths are interpolated between entered azimuths.

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